

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A transmitter for use with a multi-channel radio communication system, transmitting a radio frame to a receiver through available channels of the multi-channel radio communication system, comprising:

a transmission media-access-control (MAC) unit that divides, when the transmitter transmits data using two or more channels of the multi-channel radio communication system, the data into the two or more channels, and generates transmission data in correspondence to each of the two or more channels in divided fashion;

a radio-frame generating unit that generates a radio frame in correspondence to each of the two or more channels; [[and]]

a transmission applying-channel notifying unit that inserts channel information to each one of the two or more channels to identify a respective channel of each radio frame;  
and ,~~wherein~~

a plurality of RF transmitters and antennas configured so that each RF transmitter and antenna correspond to one of the channels, and transmits the channel information only for the radio frames of the corresponding channel ~~the transmitter transmits each radio frame containing the channel information.~~

Claim 2 (Original): The transmitter according to claim 1, wherein  
the transmission applying-channel notifying unit inserts the channel information into an unused area of transmission data generated by the transmission media-access-control unit.

Claim 3 (Original): The transmitter according to claim 1, wherein

the transmission applying-channel notifying unit inserts the channel information into a preamble of the radio frame.

Claim 4 (Currently Amended): The transmitter according to claim 1, wherein the transmission applying-channel notifying unit notifies the channel information to the radio-frame generating unit, when the radio-frame generating unit generates the radio frame using the channel information, and

the radio-frame generating unit executes a predetermined transmission processing on each transmission data, and uses the channel information for an initial value of a scramble processing corresponding to [[as]] the predetermined transmission processing, when generating the radio frame.

Claim 5 (Original): The transmitter according to claim 1, wherein the radio-frame generating unit includes an encoding unit that encodes the transmission data contained in the radio frame,

the transmission applying-channel notifying unit inserts the channel information into an encoding-unit initializing section for initializing the encoding unit within the radio frame, and

the radio-frame generating unit initializes the encoding unit at a timing when an input of a pattern of the encoding-unit initializing section to the encoding unit is completed.

Claim 6 (Previously Presented): The transmitter according to claim 1, wherein the transmission media-access-control unit checks a reception state of a plurality of channels, and determines the applying channel based on a result of the check.

Claim 7 (Previously Presented): The transmitter according to claim 1, wherein the channel information includes at least one of an identical frame mark for identifying whether a radio frame received by a receiver is addressed to a local apparatus and applying-channel-number information indicating a channel number of the applying channel.

Claim 8 (Previously Presented): The transmitter according to claim 7, wherein the applying-channel-number information includes information indicating a division order of transmission frames generated by the transmission media-access-control with respect to the multi channel radio communication system.

Claim 9 (Previously Presented): The transmitter according to claim 3, wherein the transmitter is a wireless local-area-network transmitter, and the channel information to be inserted into the preamble is a special preamble pattern obtained by inverting a polarity of a part of either one of a short training symbol or a long training symbol that constitute a preamble of the wireless local-area-network frame.

Claim 10 (Currently Amended): A receiver for use with a multi-channel radio communication system, receiving a radio frame from a transmitter of the radio communication system using available channels of the multi-channel radio communication system, comprising:

a receiving unit that receives two or more channels of divided transmission data and generates reception data by performing a predetermined reception processing on respective radio frames of the two or more channels, each radio frame containing channel information to identify a corresponding one of the two or more channels;

a reception applying-channel notifying unit that extracts reception data addressed to a local apparatus based on either one of information extracted by the reception processing or channel information contained in the reception data; and

a reception media-access-control unit (MAC) that generates a reception frame by reassembling an original transmission frame from the reception data extracted by the reception applying-channel notifying unit,

the receiving unit further including a plurality of RF receivers and antennas configured so that each RF receiver and antenna correspond to one of the channels, and receives the channel information only for the radio frames of the corresponding channel, wherein processing of the channel information by the receiver is carried out using only the MAC layer.

Claim 11 (Previously Presented): The receiver according to claim 10, wherein the receiving unit executes a descramble processing as the predetermined reception processing, and outputs an initial value extracted by the descramble processing to the reception applying-channel notifying unit.

Claim 12 (Previously Presented): The receiver according to claim 10, wherein the receiving unit executes a demodulation processing as the predetermined reception processing, and outputs at least one of a preamble generated by the demodulation processing and data of an encoding-unit initializing section contained in demodulated data to the reception applying-channel notifying unit.

Claim 13 (Currently Amended): A radio communication apparatus for use with a mult-channel radio communication system, communicating with other radio communication

apparatus ~~in~~ of the radio communication system using available channels of the multi-channel, comprising:

a transmitter that includes

a transmission media-access-control (MAC) unit that divides, when the transmitter transmits data using two or more channels of the multi-channel radio communication system, the data into the two or more channels, and generates transmission data in correspondence to each of the two or more channels in divided fashion;

a radio-frame generating unit that generates a radio frame in correspondence to each of the two or more channels; and

a transmission applying-channel notifying unit that inserts channel information to each one of the two or more channels to identify a respective channel of each radio frame; and

a plurality of RF transmitters and antennas configured so that each RF transmitter and antenna correspond to one of the channels, and transmits the channel information only for the radio frames of the corresponding channel

~~, wherein the transmitter transmits each radio frame containing the channel information;~~ and

a receiver that includes

a receiving unit that receives two or more channels of divided transmission data and generates reception data by performing a predetermined reception processing on respective radio frames of the two or more channels;

a reception applying-channel notifying unit that extracts reception data addressed to a local apparatus based on either one of information extracted by the reception processing or channel information contained in the reception data; and

a reception media-access-control unit (MAC) that generates a reception frame by reassembling an original transmission frame from the reception data extracted by the reception applying-channel notifying unit,

the receiving unit further including a plurality of RF receivers and antennas configured so that each RF receiver and antenna correspond to one of the channels, and receives the channel information only for the radio frames of the corresponding channel.

Claim 14 (Original): The radio communication apparatus according to claim 13, wherein

the transmission applying-channel notifying unit inserts the channel information into an unused area of transmission data generated by the transmission media-access-control unit, and

the reception applying-channel notifying unit extracts the channel information from the reception data.

Claim 15 (Currently Amended): The radio communication apparatus according to claim 13, wherein

the transmission applying-channel notifying unit notifies the channel information to the radio-frame generating unit, when the radio-frame generating unit generates the radio frame using the channel information,

the radio-frame generating unit executes a predetermined transmission processing on each transmission data, and uses the channel information for an initial value of a scramble processing corresponding to [[as]] the predetermined transmission processing, when generating the radio frame, and

the receiving unit executes a descramble processing as the predetermined reception processing, and outputs an initial value extracted by the descramble processing to the reception applying-channel notifying unit.

Claim 16 (Previously Presented): The radio communication apparatus according to claim 13, wherein

the transmission applying-channel notifying unit inserts the channel information into a preamble of the radio frame, and

the receiving unit executes a demodulation processing as the predetermined reception processing, and outputs a preamble generated by the demodulation processing to the reception applying-channel notifying unit.

Claim 17 (Previously Presented): The radio communication apparatus according to claim 13, wherein

the radio-frame generating unit includes an encoding unit that encodes the transmission data contained in the radio frame,

the transmission applying-channel notifying unit inserts the channel information into an encoding-unit initializing section for initializing the encoding unit within the radio frame,

the radio-frame generating unit initializes the encoding unit at a timing when an input of a pattern of the encoding-unit initializing section to the encoding unit is completed, and

the receiving unit executes a demodulation processing as the predetermined reception processing, and outputs data of an encoding-unit initializing section contained in demodulated data to the reception applying-channel notifying unit.

Claim 18 (Previously Presented): The radio communication apparatus according to claim 13, wherein

the transmission media-access-control unit includes a unit which checks a reception state of a plurality of channels, and determines the applying channel based on a result of the check.

Claim 19 (Original): The radio communication apparatus according to claim 13, wherein

the channel information includes at least one of an identical frame mark for identifying whether a radio frame received by the receiver is addressed to a local apparatus and applying-channel-number information indicating a channel number of the applying channel.

Claim 20 (Previously Presented): The radio communication apparatus according to claim 19, wherein

the applying-channel-number information includes information indicating an a division order of transmission frames generated by the transmission media-access-control with respect to the multi channel radio communication system.

Claim 21 (Previously Presented): The radio communication apparatus according to claim 16, wherein

the transmitter is a wireless local-area-network is, transmitter, and the channel information to be inserted into the preamble is a special preamble pattern obtained by inverting a polarity of a part of either one of a short training symbol or a long training symbol that constitute a preamble of the wireless local-area-network frame.



22. (New): The transmitter according to claim 1, wherein:  
each channel uses a different portion of a usable frequency band.

23. (New): The receiver according to claim 10, wherein:  
each channel uses a different portion of a usable frequency band.

24. (New): The radio communication apparatus according to claim 13, wherein:  
each channel uses a different portion of a usable frequency band.